

Sequence Listing

<110> Desnoyers, Luc

Eaton, Dan L.

Goddard, Audrey

Godowski, Paul J.

Gurney, Austin L.

Pan, James

Stewart, Timothy A.

Watanabe, Colin K.

Wood, William I.

Zhang, Zemin

<120> SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC
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 Gln Thr Gly Gly Leu Pro Pro Asp Cys Ser Lys Cys Cys His Gly
 35 40 45
 Asp Tyr Ser Phe Arg Gly Tyr Gln Gly Pro Pro Gly Pro Pro Gly
 50 55 60
 Pro Pro Gly Ile Pro Gly Asn His Gly Asn Asn Gly Asn Asn Gly
 65 70 75
 Ala Thr Gly His Glu Gly Ala Lys Gly Glu Lys Gly Asp Lys Gly
 80 85 90
 Asp Leu Gly Pro Arg Gly Glu Arg Gly Gln His Gly Pro Lys Gly
 95 100 105
 Glu Lys Gly Tyr Pro Gly Ile Pro Pro Glu Leu Gln Ile Ala Phe
 110 115 120
 Met Ala Ser Leu Ala Thr His Phe Ser Asn Gln Asn Ser Gly Ile
 125 130 135
 Ile Phe Ser Ser Val Glu Thr Asn Ile Gly Asn Phe Phe Asp Val
 140 145 150

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| Met Thr Gly Arg | Phe Gly Ala Pro Val | Ser Gly Val Tyr Phe Phe |
| 155 | 160 | 165 |
| Thr Phe Ser Met | Met Lys His Glu Asp Val | Glu Glu Val Tyr Val |
| 170 | 175 | 180 |
| Tyr Leu Met His | Asn Gly Asn Thr Val | Phe Ser Met Tyr Ser Tyr |
| 185 | 190 | 195 |
| Glu Met Lys Gly | Lys Ser Asp Thr Ser | Ser Asn His Ala Val Leu |
| 200 | 205 | 210 |
| Lys Leu Ala Lys | Gly Asp Glu Val Trp | Leu Arg Met Gly Asn Gly |
| 215 | 220 | 225 |
| Ala Leu His Gly | Asp His Gln Arg Phe | Ser Thr Phe Ala Gly Phe |
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| Leu Leu Phe Glu | Thr Lys | |
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 35 40 45
 Ser Leu Pro Gly Phe Lys Glu Ile Val Ser Arg Gly Val Lys Val
 50 55 60
 Asp Tyr Leu Thr Pro Asp Phe Pro Ser Leu Ser Tyr Pro Asn Tyr
 65 70 75
 Tyr Thr Leu Met Thr Gly Arg His Cys Glu Val His Gln Met Ile
 80 85 90
 Gly Asn Tyr Met Trp Asp Pro Thr Thr Asn Lys Ser Phe Asp Ile
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Ser Trp Ser Arg Val Met Cys Met Leu Lys Gly Arg Ala Gly Thr
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| Cys | Leu | Ala | His | His | Asp | Pro | Ser | Leu | Arg | Gly | His | Pro | His | Ser |
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| His | Gly | Thr | Pro | His | Cys | Tyr | Ser | Ala | Glu | Glu | Leu | Pro | Leu | Gly |
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| Gln | Ala | Pro | Pro | His | Leu | Leu | Ala | Arg | Gly | Ala | Lys | Trp | Gly | Gln |
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| Ala | Leu | Pro | Val | Ala | Leu | Val | Ser | Ser | Leu | Glu | Ala | Ala | Ser | His |
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| Arg | Gly | Arg | His | Glu | Arg | Pro | Ser | Ala | Thr | Thr | Gln | Cys | Pro | Val |
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| Leu | Arg | Pro | Glu | Glu | Val | Leu | Glu | Ala | Asp | Thr | His | Gln | Arg | Ser |
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| Ile | Ser | Pro | Trp | Arg | Tyr | Arg | Val | Asp | Thr | Asp | Glu | Asp | Arg | Tyr |
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| Leu | Leu | Gln | Ser | Leu | Leu | Val | Leu | Arg | Arg | Arg | Pro | Cys | Ser | Arg |
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35 40 45
His Cys Val Thr Thr Ala Thr Arg Val Leu Ser Asn Thr Glu Asp
50 55 60
Leu Pro Leu Val Thr Lys Met Cys His Ile Gly Cys Pro Asp Ile
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Thr Ser Leu Cys Asn His Asp
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 Cys Phe Ala Asp Phe Lys His Pro Cys Tyr Lys Met Ala Tyr Phe
 35 40 45
 His Glu Leu Ser Ser Arg Val Ser Phe Gln Glu Ala Arg Leu Ala
 50 55 60
 Cys Glu Ser Glu Gly Gly Val Leu Leu Ser Leu Glu Asn Glu Ala
 65 70 75
 Glu Gln Lys Leu Ile Glu Ser Met Leu Gln Asn Leu Thr Lys Pro
 80 85 90
 Gly Thr Gly Ile Ser Asp Gly Asp Phe Trp Ile Gly Leu Trp Arg
 95 100 105
 Asn Gly Asp Gly Gln Thr Ser Gly Ala Cys Pro Asp Leu Tyr Gln
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 Trp Ser Asp Gly Ser Asn Ser Gln Tyr Arg Asn Trp Tyr Thr Asp
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 Glu Pro Ser Cys Gly Ser Glu Lys Cys Val Val Met Tyr His Gln
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 Pro Thr Ala Asn Pro Gly Leu Gly Gly Pro Tyr Leu Tyr Gln Trp
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| | | | | | |
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| Thr Asn Gln Pro Gly Asp Thr His Gln Asn Val Val Val Thr Glu | | | | | |
| | 200 | | 205 | | 210 |
| Ala Gly Ile Ile Pro Asn Leu Ile Tyr Val Val Ile Pro Thr Ile | | | | | |
| | 215 | | 220 | | 225 |
| Pro Leu Leu Leu Leu Ile Leu Val Ala Phe Gly Thr Cys Cys Phe | | | | | |
| | 230 | | 235 | | 240 |
| Gln Met Leu His Lys Ser Lys Gly Arg Thr Lys Thr Ser Pro Asn | | | | | |
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<400> 20
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 <223> Synthetic oligonucleotide probe

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 gggtcctac ctttaccagt ggaatgatga caggtgtaac atgaagcac 49

<210> 22
 <211> 3824

<212> DNA
<213> Homo Sapien

<400> 22

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gcgtgaaggg cacagaccgc cttgtgaatg tctttctggg cattccattt 200
gcccagccgc cactgggccc tgaccgggtc tcagccccac acccagcaca 250
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 tggggcattg tacaagttct tccctctccc tgaagtgcct ttcttgcttt 1950
 cttcgtggta ggttctagca cattcctcta gcttcctgga ggactcactc 2000
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 ccagagcctt caggtgcaa agccatactc agggcccccac cgacattgtc 2300
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gctcgatttc tcgctgggcc ttagctgcct ccccgcgggg cagggtcgg 3150
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ccagctgggc tctgagtct ggtggggact tggagaacct ttatgtctag 3400
ctaagggtt gtaaatacac cgatgggcac tctgtatcta gctcaagggt 3450
tgtaaacaca ccaatcagca ccctgtgtct agctcagtgt ttgtgaatgc 3500
accaatccac actctgtatc tggctactct ggtggggact tggagaacct 3550
ttgtgtccac actctgtatc tagctaact agtggggatg tggagaacct 3600
ttgtgtctag ctcagggatc gtaaaccgac caatcagcac cctgtcaaaa 3650
cagaccactt gactctctgt aaaatggacc aatcagcagg atgtgggtgg 3700
ggcgagacaa gagaataaaa gcaggctgcc tgagccagca gtgacaaccc 3750
ccctcgggtc ccctcccacg ccgtggaagc tttgttcttt cgctctttgc 3800
aataaatctt gctactgccc aaaa 3824

<210> 23
<211> 571
<212> PRT
<213> Homo Sapien

<400> 23
Met Glu Arg Ala Val Arg Val Glu Ser Gly Val Leu Val Gly Val
1 5 10 15
Val Cys Leu Leu Leu Ala Cys Pro Ala Thr Ala Thr Gly Pro Glu
20 25 30
Val Ala Gln Pro Glu Val Asp Thr Thr Leu Gly Arg Val Arg Gly
35 40 45
Arg Gln Val Gly Val Lys Gly Thr Asp Arg Leu Val Asn Val Phe

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| His | Glu | Phe | Ser | Trp | Leu | Ile | Pro | Arg | Gly | Trp | Gly | Leu | Leu | Asp | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Thr | Met | Glu | Gln | Met | Ser | Arg | Glu | Asp | Met | Leu | Ala | Ile | Ser | Thr | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Pro | Val | Leu | Thr | Ser | Leu | Asp | Val | Pro | Pro | Glu | Met | Met | Pro | Thr | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Val | Ile | Asp | Glu | Tyr | Leu | Gly | Ser | Asn | Ser | Asp | Ala | Gln | Ala | Lys | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Cys | Gln | Ala | Phe | Gln | Glu | Phe | Met | Gly | Asp | Val | Phe | Ile | Asn | Val | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Pro | Thr | Val | Ser | Phe | Ser | Arg | Tyr | Leu | Arg | Asp | Ser | Gly | Ser | Pro | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Val | Phe | Phe | Tyr | Glu | Phe | Gln | His | Arg | Pro | Ser | Ser | Phe | Ala | Lys | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Ile | Lys | Pro | Ala | Trp | Val | Lys | Ala | Asp | His | Gly | Ala | Glu | Gly | Ala | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Phe | Val | Phe | Gly | Gly | Pro | Phe | Leu | Met | Asp | Glu | Ser | Ser | Arg | Leu | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| Ala | Phe | Pro | Glu | Ala | Thr | Glu | Glu | Glu | Lys | Gln | Leu | Ser | Leu | Thr | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Met | Met | Ala | Gln | Trp | Thr | His | Phe | Ala | Arg | Thr | Gly | Asp | Pro | Asn | |
| | | | | 500 | | | | | 505 | | | | | 510 | |
| Ser | Lys | Ala | Leu | Pro | Pro | Trp | Pro | Gln | Phe | Asn | Gln | Ala | Glu | Gln | |
| | | | | 515 | | | | | 520 | | | | | 525 | |
| Tyr | Leu | Glu | Ile | Asn | Pro | Val | Pro | Arg | Ala | Gly | Gln | Lys | Phe | Arg | |
| | | | | 530 | | | | | 535 | | | | | 540 | |
| Glu | Ala | Trp | Met | Gln | Phe | Trp | Ser | Glu | Thr | Leu | Pro | Ser | Lys | Ile | |
| | | | | 545 | | | | | 550 | | | | | 555 | |
| Gln | Gln | Trp | His | Gln | Lys | Gln | Lys | Asn | Arg | Lys | Ala | Gln | Glu | Asp | |
| | | | | 560 | | | | | 565 | | | | | 570 | |

Leu

<210> 24
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 24
 gcaaagctct gcctccttgg cc 22

<210> 25
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 25
gggtggactg tgctctaattg gacgc 25

<210> 26
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 26
cgtggcactg ggttgatc 18

<210> 27
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 27
gatgcagttc tggtcagaga cgctccccag caagatacaa cagtg 45

<210> 28
<211> 1342
<212> DNA
<213> Homo Sapien

<400> 28
catggagcct cttgcagctt acccgctaaa atgttccggg cccagagcaa 50
aggtatttgc agttttgctg tctatagttc tatgcacagt aacgctattt 100
cttctacaac taaaattcct caaacctaaa atcaacagct tttatgcctt 150
tgaagtgaag gatgcaaaag gaagaactgt ttctctggaa aagtataaag 200
gcaaagtttc actagttgta aacgtggcca gtgactgcca actcacagac 250
agaaattact tagggctgaa ggaactgcac aaagagtttg gaccatccca 300
cttcagcgtg ttggcttttc cctgcaatca gtttgagaa tcggagcccc 350
gccaagcaa ggaagtagaa tcttttgcaa gaaaaaacta cggagtaact 400
ttcccatct tccacaagat taagattcta ggatctgaag gagaacctgc 450
atttagattt cttgttgatt cttcaaagaa ggaaccaagg tggaattttt 500

ggaagtatct tgtcaaccct gagggccaag ttgtgaagtt ctggaggcca 550
gaggagccca ttgaagtcac caggcctgac atagcagctc tggtagaca 600
agtgatcata aaaaagaaag aggatctatg agaatgccat tgcgtttcta 650
atagaacaga gaaatgtctc catgaggggt ttgtctcatt ttaaaccattt 700
tttttttggg gacagtgtct cactctgtca cccaggctgg agtgcagtag 750
tgcgtttcta gctcattgca acctctgcct ttttaaaccat gctattaaat 800
gtggcaatga aggatttttt tttaatgtta tcttgctatt aagtggtaat 850
gaatgttccc aggatgagga tgttacccaa agcaaaaatc aagagtagcc 900
aaagaatcaa catgaaatat attactact tctctgacc atactaaaga 950
attcagaata cacagtgacc aatgtgcctc aatatcttat tgttcaactt 1000
gacattttct aggactgtac ttgatgaaaa tgccaacaca ctagaccact 1050
ctttggattc aagagcactg tgtatgactg aaatttctgg aataactgta 1100
aatggttatg ttaatggaat aaaacacaaa tggtgaaaaa tgtaaaatat 1150
atatacatag attcaaattc ttatatatgt atgcttgttt tgtgtacagg 1200
attttgtttt ttctttttta gtacagggtc ctagtggttt actataactg 1250
tcactatgta tgtaactgac atatataaat agtcatttat aaatgaccgt 1300
attataacat ttgaaaaagt cttcatcaaa aaaaaaaaaa aa 1342

<210> 29
<211> 209
<212> PRT
<213> Homo Sapien

<400> 29
Met Glu Pro Leu Ala Ala Tyr Pro Leu Lys Cys Ser Gly Pro Arg
1 5 10 15
Ala Lys Val Phe Ala Val Leu Leu Ser Ile Val Leu Cys Thr Val
20 25 30
Thr Leu Phe Leu Leu Gln Leu Lys Phe Leu Lys Pro Lys Ile Asn
35 40 45
Ser Phe Tyr Ala Phe Glu Val Lys Asp Ala Lys Gly Arg Thr Val
50 55 60
Ser Leu Glu Lys Tyr Lys Gly Lys Val Ser Leu Val Val Asn Val
65 70 75
Ala Ser Asp Cys Gln Leu Thr Asp Arg Asn Tyr Leu Gly Leu Lys
80 85 90

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Leu | His | Lys | Glu | Phe | Gly | Pro | Ser | His | Phe | Ser | Val | Leu | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Phe | Pro | Cys | Asn | Gln | Phe | Gly | Glu | Ser | Glu | Pro | Arg | Pro | Ser | Lys |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Glu | Val | Glu | Ser | Phe | Ala | Arg | Lys | Asn | Tyr | Gly | Val | Thr | Phe | Pro |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ile | Phe | His | Lys | Ile | Lys | Ile | Leu | Gly | Ser | Glu | Gly | Glu | Pro | Ala |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Phe | Arg | Phe | Leu | Val | Asp | Ser | Ser | Lys | Lys | Glu | Pro | Arg | Trp | Asn |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Phe | Trp | Lys | Tyr | Leu | Val | Asn | Pro | Glu | Gly | Gln | Val | Val | Lys | Phe |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Trp | Arg | Pro | Glu | Glu | Pro | Ile | Glu | Val | Ile | Arg | Pro | Asp | Ile | Ala |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ala | Leu | Val | Arg | Gln | Val | Ile | Ile | Lys | Lys | Lys | Glu | Asp | Leu | |
| | | | | 200 | | | | | 205 | | | | | |

<210> 30
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 30
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<210> 31
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 31
 gtatcttgtc aaccctgagg 20

<210> 32
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 32
 taaccagagc tgctatgtca ggcc 24

<210> 33

<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 33
aggcaaagtt tcactagttg taaacgtggc cagtgactgc caactcacag 50

<210> 34
<211> 3721
<212> DNA
<213> Homo Sapien

<400> 34
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ctgaggagcc gccgccgctt agcgtggccc ccagggacta cctgaaccac 150
tatcccgtgt ttgtgggcag cgggcccga cgcctgaccc ccgcagaagg 200
tgctgacgac ctcaacatcc agcgagtcct gcgggtcaac aggacgctgt 250
tcattgggga cagggacaac ctctaccgcg tagagctgga gccccccacg 300
tccacggagc tgcggtacca gaggaagctg acctggagat ctaaccccag 350
cgacataaac gtgtgtcgga tgaagggcaa acaggagggc gagtgtcgaa 400
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tggaagaagca gtggacgtcc ttctgaagg cgcggctcaa ctgctctgta 900
cccggagact cccatttcta cttcaacgtg ctgcaggctg tcacgggcgt 950
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gcaacagcat ccctggctcg gctgtctgcg cttttgacct gacacagggtg 1050

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Leu | Leu | Leu | Gly | Gly | Ala | His | Gly | Leu | Phe | Pro | Glu | Glu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Pro | Pro | Pro | Leu | Ser | Val | Ala | Pro | Arg | Asp | Tyr | Leu | Asn | His | Tyr |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Pro | Val | Phe | Val | Gly | Ser | Gly | Pro | Gly | Arg | Leu | Thr | Pro | Ala | Glu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gly | Ala | Asp | Asp | Leu | Asn | Ile | Gln | Arg | Val | Leu | Arg | Val | Asn | Arg |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Thr | Leu | Phe | Ile | Gly | Asp | Arg | Asp | Asn | Leu | Tyr | Arg | Val | Glu | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Glu | Pro | Pro | Thr | Ser | Thr | Glu | Leu | Arg | Tyr | Gln | Arg | Lys | Leu | Thr |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Trp | Arg | Ser | Asn | Pro | Ser | Asp | Ile | Asn | Val | Cys | Arg | Met | Lys | Gly |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Lys | Gln | Glu | Gly | Glu | Cys | Arg | Asn | Phe | Val | Lys | Val | Leu | Leu | Leu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Arg | Asp | Glu | Ser | Thr | Leu | Phe | Val | Cys | Gly | Ser | Asn | Ala | Phe | Asn |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Pro | Val | Cys | Ala | Asn | Tyr | Ser | Ile | Asp | Thr | Leu | Gln | Pro | Val | Gly |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Asp | Asn | Ile | Ser | Gly | Met | Ala | Arg | Cys | Pro | Tyr | Asp | Pro | Lys | His |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Ala | Asn | Val | Ala | Leu | Phe | Ser | Asp | Gly | Met | Leu | Phe | Thr | Ala | Thr |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Val | Thr | Asp | Phe | Leu | Ala | Ile | Asp | Ala | Val | Ile | Tyr | Arg | Ser | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Gly | Asp | Arg | Pro | Thr | Leu | Arg | Thr | Val | Lys | His | Asp | Ser | Lys | Trp |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Phe | Lys | Glu | Pro | Tyr | Phe | Val | His | Ala | Val | Glu | Trp | Gly | Ser | His |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Val | Tyr | Phe | Phe | Phe | Arg | Glu | Ile | Ala | Met | Glu | Phe | Asn | Tyr | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Glu | Lys | Val | Val | Val | Ser | Arg | Val | Ala | Arg | Val | Cys | Lys | Asn | Asp |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Val | Gly | Gly | Ser | Pro | Arg | Val | Leu | Glu | Lys | Gln | Trp | Thr | Ser | Phe |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Leu | Lys | Ala | Arg | Leu | Asn | Cys | Ser | Val | Pro | Gly | Asp | Ser | His | Phe |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Tyr | Phe | Asn | Val | Leu | Gln | Ala | Val | Thr | Gly | Val | Val | Ser | Leu | Gly |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Thr | Ser | Ser | Val | Ala | Ala | Phe | Val | Val | Gly | Ala | Val | Val | Ser | Gly | |
| | | | | 605 | | | | | 610 | | | | | 615 | |
| Phe | Ser | Val | Gly | Trp | Phe | Val | Gly | Leu | Arg | Glu | Arg | Arg | Glu | Leu | |
| | | | | 620 | | | | | 625 | | | | | 630 | |
| Ala | Arg | Arg | Lys | Asp | Lys | Glu | Ala | Ile | Leu | Ala | His | Gly | Ala | Gly | |
| | | | | 635 | | | | | 640 | | | | | 645 | |
| Glu | Ala | Val | Leu | Ser | Val | Ser | Arg | Leu | Gly | Glu | Arg | Arg | Ala | Gln | |
| | | | | 650 | | | | | 655 | | | | | 660 | |
| Gly | Pro | Gly | Gly | Arg | Gly | Gly | Gly | Gly | Gly | Gly | Gly | Ala | Gly | Val | |
| | | | | 665 | | | | | 670 | | | | | 675 | |
| Pro | Pro | Glu | Ala | Leu | Leu | Ala | Pro | Leu | Met | Gln | Asn | Gly | Trp | Ala | |
| | | | | 680 | | | | | 685 | | | | | 690 | |
| Lys | Ala | Thr | Leu | Leu | Gln | Gly | Gly | Pro | His | Asp | Leu | Asp | Ser | Gly | |
| | | | | 695 | | | | | 700 | | | | | 705 | |
| Leu | Leu | Pro | Thr | Pro | Glu | Gln | Thr | Pro | Leu | Pro | Gln | Lys | Arg | Leu | |
| | | | | 710 | | | | | 715 | | | | | 720 | |
| Pro | Thr | Pro | His | Pro | His | Pro | His | Ala | Leu | Gly | Pro | Arg | Ala | Trp | |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Asp | His | Gly | His | Pro | Leu | Leu | Pro | Ala | Ser | Ala | Ser | Ser | Ser | Leu | |
| | | | | 740 | | | | | 745 | | | | | 750 | |
| Leu | Leu | Leu | Ala | Pro | Ala | Arg | Ala | Pro | Glu | Gln | Pro | Pro | Ala | Pro | |
| | | | | 755 | | | | | 760 | | | | | 765 | |
| Gly | Glu | Pro | Thr | Pro | Asp | Gly | Arg | Leu | Tyr | Ala | Ala | Arg | Pro | Gly | |
| | | | | 770 | | | | | 775 | | | | | 780 | |
| Arg | Ala | Ser | His | Gly | Asp | Phe | Pro | Leu | Thr | Pro | His | Ala | Ser | Pro | |
| | | | | 785 | | | | | 790 | | | | | 795 | |
| Asp | Arg | Arg | Arg | Val | Val | Ser | Ala | Pro | Thr | Gly | Pro | Leu | Asp | Pro | |
| | | | | 800 | | | | | 805 | | | | | 810 | |
| Ala | Ser | Ala | Ala | Asp | Gly | Leu | Pro | Arg | Pro | Trp | Ser | Pro | Pro | Pro | |
| | | | | 815 | | | | | 820 | | | | | 825 | |
| Thr | Gly | Ser | Leu | Arg | Arg | Pro | Leu | Gly | Pro | His | Ala | Pro | Pro | Ala | |
| | | | | 830 | | | | | 835 | | | | | 840 | |
| Ala | Thr | Leu | Arg | Arg | Thr | His | Thr | Phe | Asn | Ser | Gly | Glu | Ala | Arg | |
| | | | | 845 | | | | | 850 | | | | | 855 | |
| Pro | Gly | Asp | Arg | His | Arg | Gly | Cys | His | Ala | Arg | Pro | Gly | Thr | Asp | |
| | | | | 860 | | | | | 865 | | | | | 870 | |
| Leu | Ala | His | Leu | Leu | Pro | Tyr | Gly | Gly | Ala | Asp | Arg | Thr | Ala | Pro | |
| | | | | 875 | | | | | 880 | | | | | 885 | |
| Pro | Val | Pro | | | | | | | | | | | | | |

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<220>
<223> Synthetic oligonucleotide probe

<400> 36
gaggacctac cggccggaca g 21

<210> 37
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 37
atacacccccg agtactgctg gcag 24

<210> 38
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 38
agacagggca gcggctgctg agcttggagc tggacgcagc tt 42

<210> 39
<211> 2014
<212> DNA
<213> Homo Sapien

<400> 39
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gccgggcggc aacctttgca gtcgcgttgg ctgctgcgat cggccggcgg 200
gtccctgccg aaggctcggc tgcttctgtc cacctcttac acttcttcat 250
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cggagaaagg cagctgagcc cggagaagag cgaaatatgg ggacccgggc 400
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 ttaaaggaaa aaaa 2014

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 <211> 502
 <212> PRT
 <213> Homo Sapien

<400> 40
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 35 40 45
 Pro Ala Arg Tyr Phe Tyr Ile Gln Ala Val Asp Thr Ser Gly Asn
 50 55 60
 Lys Phe Thr Ser Ser Pro Gly Glu Lys Val Phe Gln Val Lys Val
 65 70 75
 Ser Ala Pro Glu Glu Gln Phe Thr Arg Val Gly Val Gln Val Leu
 80 85 90
 Asp Arg Lys Asp Gly Ser Phe Ile Val Arg Tyr Arg Met Tyr Ala
 95 100 105
 Ser Tyr Lys Asn Leu Lys Val Glu Ile Lys Phe Gln Gly Gln His
 110 115 120
 Val Ala Lys Ser Pro Tyr Ile Leu Lys Gly Pro Val Tyr His Glu
 125 130 135
 Asn Cys Asp Cys Pro Leu Gln Asp Ser Ala Ala Trp Leu Arg Glu
 140 145 150
 Met Asn Cys Pro Glu Thr Ile Ala Gln Ile Gln Arg Asp Leu Ala
 155 160 165
 His Phe Pro Ala Val Asp Pro Glu Lys Ile Ala Val Glu Ile Pro
 170 175 180
 Lys Arg Phe Gly Gln Arg Gln Ser Leu Cys His Tyr Thr Leu Lys
 185 190 195
 Asp Asn Lys Val Tyr Ile Lys Thr His Gly Glu His Val Gly Phe
 200 205 210
 Arg Ile Phe Met Asp Ala Ile Leu Leu Ser Leu Thr Arg Lys Val
 215 220 225
 Lys Met Pro Asp Val Glu Leu Phe Val Asn Leu Gly Asp Trp Pro

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 41
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<210> 42
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 42
cgataagctg ctacagtgcc atcg 24

<210> 43
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 43
gtgactgtcc tctgcaagat agtgcagcct ggctacggga 40

<210> 44
<211> 2395
<212> DNA
<213> Homo Sapien

<400> 44
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tcgctacctg ttgcgtagcg atcgaggtgc tagggatcgc ggtcttcctt 150
cggggattct tcccggctcc cgttcgttcc tctgccagag cggaacacgg 200
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gccttgagag atgattttgt gtttgggtca aaggggtgtga aatttatgcc 350
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gcctcatcag gtccagattt ctttccaagg cggacgtttt ctgttggaat 2000

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 ggatcaaggg acccactgca gtggcagcag gactgttggg cccccacccc 2150
 aaccctgcac agccctcatc ccctcttggc ttgagccgtc agaggccctg 2200
 tgctgagtgt ctgaccgaga cactcacagc tttgtcatca gggcacaggg 2250
 ttcctcggag ccaggatgat ctgtgccacg cttgcacctc gggcccatct 2300
 gggctcatgc tctctctcct gctattgaat tagtacctag ctgcacacag 2350
 tatgtagtta ccaaaagaat aaacggcaat aattgagaaa aaaaa 2395

<210> 45

<211> 310

<212> PRT

<213> Homo Sapien

<400> 45

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Arg | Leu | Gly | Ser | Gly | Thr | Phe | Ala | Thr | Cys | Cys | Val | Ala | Ile | 1 | 5 | 10 | 15 |
| Glu | Val | Leu | Gly | Ile | Ala | Val | Phe | Leu | Arg | Gly | Phe | Phe | Pro | Ala | 20 | 25 | 30 | |
| Pro | Val | Arg | Ser | Ser | Ala | Arg | Ala | Glu | His | Gly | Ala | Glu | Pro | Pro | 35 | 40 | 45 | |
| Ala | Pro | Glu | Pro | Ser | Ala | Gly | Ala | Ser | Ser | Asn | Trp | Thr | Thr | Leu | 50 | 55 | 60 | |
| Pro | Pro | Pro | Leu | Phe | Ser | Lys | Val | Val | Ile | Val | Leu | Ile | Asp | Ala | 65 | 70 | 75 | |
| Leu | Arg | Asp | Asp | Phe | Val | Phe | Gly | Ser | Lys | Gly | Val | Lys | Phe | Met | 80 | 85 | 90 | |
| Pro | Tyr | Thr | Thr | Tyr | Leu | Val | Glu | Lys | Gly | Ala | Ser | His | Ser | Phe | 95 | 100 | 105 | |
| Val | Ala | Glu | Ala | Lys | Pro | Pro | Thr | Val | Thr | Met | Pro | Arg | Ile | Lys | 110 | 115 | 120 | |
| Ala | Leu | Met | Thr | Gly | Ser | Leu | Pro | Gly | Phe | Val | Asp | Val | Ile | Arg | 125 | 130 | 135 | |
| Asn | Leu | Asn | Ser | Pro | Ala | Leu | Leu | Glu | Asp | Ser | Val | Ile | Arg | Gln | 140 | 145 | 150 | |
| Ala | Lys | Ala | Ala | Gly | Lys | Arg | Ile | Val | Phe | Tyr | Gly | Asp | Glu | Thr | 155 | 160 | 165 | |
| Trp | Val | Lys | Leu | Phe | Pro | Lys | His | Phe | Val | Glu | Tyr | Asp | Gly | Thr | 170 | 175 | 180 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ser | Phe | Phe | Val | Ser | Asp | Tyr | Thr | Glu | Val | Asp | Asn | Asn | Val |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Thr | Arg | His | Leu | Asp | Lys | Val | Leu | Lys | Arg | Gly | Asp | Trp | Asp | Ile |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Leu | Ile | Leu | His | Tyr | Leu | Gly | Leu | Asp | His | Ile | Gly | His | Ile | Ser |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Gly | Pro | Asn | Ser | Pro | Leu | Ile | Gly | Gln | Lys | Leu | Ser | Glu | Met | Asp |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ser | Val | Leu | Met | Lys | Ile | His | Thr | Ser | Leu | Gln | Ser | Lys | Glu | Arg |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Glu | Thr | Pro | Leu | Pro | Asn | Leu | Leu | Val | Leu | Cys | Gly | Asp | His | Gly |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Met | Ser | Glu | Thr | Gly | Ser | His | Gly | Ala | Ser | Ser | Thr | Glu | Glu | Val |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Asn | Thr | Pro | Leu | Ile | Leu | Ile | Ser | Ser | Ala | Phe | Glu | Arg | Lys | Pro |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Gly | Asp | Ile | Arg | His | Pro | Lys | His | Val | Gln | | | | | |
| | | | | 305 | | | | | 310 | | | | | |

<210> 46

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 46

cgggactttc gctacctgtt gc 22

<210> 47

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 47

catcatattc cacaaaatgc tttggg 26

<210> 48

<211> 38

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 48

ccttcgggga ttcttcccgg ctcccgttcg ttcctctg 38

<210> 49

<211> 918

<212> DNA

<213> Homo Sapien

<400> 49

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agcaatggca atgggggtcc ccagagtcac tctgctctgc ctctttgggg 100
ctgcgctctg cctgacaggg tcccaagccc tgcagtgcta cagctttgag 150
cacacctact ttggcccctt tgacctcagg gccatgaagc tgcccagcat 200
ctcctgtcct catgagtgcct ttgaggctat cctgtctctg gacaccgggt 250
atcgcgcgcc ggtgacctg gtgcggaagg gctgctggac cgggcctcct 300
gcgggccaga cgcaatcgaa cccggacgcg ctgccgccag actactcggg 350
ggtgcgcggc tgcacaactg acaaatgcaa cgcccacctc atgactcatg 400
acgccctccc caacctgagc caagcaccgc acccgccgac gctcagcggc 450
gccgagtgcct acgcctgtat cgggggtccac caggatgact gcgctatcgg 500
cagggtcccga cgagtccagt gtcaccagga ccagaccgcc tgcttccagg 550
gcagtggcag aatgacagtt ggcaatttct cagtccctgt gtacatcaga 600
acctgccacc ggccctcctg caccaccgag ggcaccacca gccctggac 650
agccatcgac ctccagggtc cctgctgtga ggggtacctc tgcaacagga 700
aatccatgac ccagcccttc accagtgcct cagccaccac ccctccccga 750
gcactacagg tcttggccct gctcctccca gtcctcctgc tgggtggggct 800
ctcagcatag accgcccctc caggatgctg gggacagggc tcacacacct 850
cattcttgct gcttcagccc ctatcacata gctcactgga aaatgatggt 900
aaagtaagaa ttgcaaaa 918

<210> 50

<211> 251

<212> PRT

<213> Homo Sapien

<400> 50

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Met | Gly | Val | Pro | Arg | Val | Ile | Leu | Leu | Cys | Leu | Phe | Gly |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |
| Ala | Ala | Leu | Cys | Leu | Thr | Gly | Ser | Gln | Ala | Leu | Gln | Cys | Tyr | Ser |
| | | | | 20 | | | | 25 | | | | | | 30 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Glu | His | Thr | Tyr | Phe | Gly | Pro | Phe | Asp | Leu | Arg | Ala | Met | Lys | 35 | 40 | 45 |
| Leu | Pro | Ser | Ile | Ser | Cys | Pro | His | Glu | Cys | Phe | Glu | Ala | Ile | Leu | 50 | 55 | 60 |
| Ser | Leu | Asp | Thr | Gly | Tyr | Arg | Ala | Pro | Val | Thr | Leu | Val | Arg | Lys | 65 | 70 | 75 |
| Gly | Cys | Trp | Thr | Gly | Pro | Pro | Ala | Gly | Gln | Thr | Gln | Ser | Asn | Pro | 80 | 85 | 90 |
| Asp | Ala | Leu | Pro | Pro | Asp | Tyr | Ser | Val | Val | Arg | Gly | Cys | Thr | Thr | 95 | 100 | 105 |
| Asp | Lys | Cys | Asn | Ala | His | Leu | Met | Thr | His | Asp | Ala | Leu | Pro | Asn | 110 | 115 | 120 |
| Leu | Ser | Gln | Ala | Pro | Asp | Pro | Pro | Thr | Leu | Ser | Gly | Ala | Glu | Cys | 125 | 130 | 135 |
| Tyr | Ala | Cys | Ile | Gly | Val | His | Gln | Asp | Asp | Cys | Ala | Ile | Gly | Arg | 140 | 145 | 150 |
| Ser | Arg | Arg | Val | Gln | Cys | His | Gln | Asp | Gln | Thr | Ala | Cys | Phe | Gln | 155 | 160 | 165 |
| Gly | Ser | Gly | Arg | Met | Thr | Val | Gly | Asn | Phe | Ser | Val | Pro | Val | Tyr | 170 | 175 | 180 |
| Ile | Arg | Thr | Cys | His | Arg | Pro | Ser | Cys | Thr | Thr | Glu | Gly | Thr | Thr | 185 | 190 | 195 |
| Ser | Pro | Trp | Thr | Ala | Ile | Asp | Leu | Gln | Gly | Ser | Cys | Cys | Glu | Gly | 200 | 205 | 210 |
| Tyr | Leu | Cys | Asn | Arg | Lys | Ser | Met | Thr | Gln | Pro | Phe | Thr | Ser | Ala | 215 | 220 | 225 |
| Ser | Ala | Thr | Thr | Pro | Pro | Arg | Ala | Leu | Gln | Val | Leu | Ala | Leu | Leu | 230 | 235 | 240 |
| Leu | Pro | Val | Leu | Leu | Leu | Val | Gly | Leu | Ser | Ala | | | | | 245 | 250 | |

<210> 51
 <211> 3288
 <212> DNA
 <213> Homo Sapien

<400> 51
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 tgcagggttt cctactgctg ttcttttatg ctgggagctg tggctgtaac 150
 caactaggaa ataacgtatg cagcagctat ggctgtcaga gagttgtgct 200

tcccaagaca aaggcaagtc ctgtttcttt ttcttttttg gggagtgtcc 250
 ttggcagggt ctgggttttg acgttattcg gtgactgagg aaacagagaa 300
 aggatccttt gtggtcaatc tggcaaagga tctgggacta gcagaggggg 350
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 ccgagagaag ctgtgtggcc ctaaagagcc ctgtatgctg tatttccaaa 500
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 aatatcagaa aatacagctg aagggacagc atttagacta gaaagagcac 650
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 aactcttttt tccatattaa cattagtggc ggtgatgaag gcatgatata 750
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 aaactcattc taacattcta tatattcgtg tttgaaaacc atgtcattta 3000
 tttctacatc atgtatttaa aaagaaatat ttctctacta ctatgctcat 3050
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ccttagttta tatacttatt attttatctt taagcatgct acttttactt 3150
 ggccaatatt ttcttatggt aacttttgct gatgtataaa acagactatg 3200
 ccttataatt gaaataaaat tataatctgc ctgaaaatga ataaaaataa 3250
 aacattttga aatgtgaaaa aaaaaaaaaa aaaaaaaaaa 3288

<210> 52
 <211> 800
 <212> PRT
 <213> Homo Sapien

<400> 52
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 Phe Leu Phe Leu Phe Trp Gly Val Ser Leu Ala Gly Ser Gly Phe
 20 25 30
 Gly Arg Tyr Ser Val Thr Glu Glu Thr Glu Lys Gly Ser Phe Val
 35 40 45
 Val Asn Leu Ala Lys Asp Leu Gly Leu Ala Glu Gly Glu Leu Ala
 50 55 60
 Ala Arg Gly Thr Arg Val Val Ser Asp Asp Asn Lys Gln Tyr Leu
 65 70 75
 Leu Leu Asp Ser His Thr Gly Asn Leu Leu Thr Asn Glu Lys Leu
 80 85 90
 Asp Arg Glu Lys Leu Cys Gly Pro Lys Glu Pro Cys Met Leu Tyr
 95 100 105
 Phe Gln Ile Leu Met Asp Asp Pro Phe Gln Ile Tyr Arg Ala Glu
 110 115 120
 Leu Arg Val Arg Asp Ile Asn Asp His Ala Pro Val Phe Gln Asp
 125 130 135
 Lys Glu Thr Val Leu Lys Ile Ser Glu Asn Thr Ala Glu Gly Thr
 140 145 150
 Ala Phe Arg Leu Glu Arg Ala Gln Asp Pro Asp Gly Gly Leu Asn
 155 160 165
 Gly Ile Gln Asn Tyr Thr Ile Ser Pro Asn Ser Phe Phe His Ile
 170 175 180
 Asn Ile Ser Gly Gly Asp Glu Gly Met Ile Tyr Pro Glu Leu Val
 185 190 195
 Leu Asp Lys Ala Leu Asp Arg Glu Glu Gln Gly Glu Leu Ser Leu
 200 205 210
 Thr Leu Thr Ala Leu Asp Gly Gly Ser Pro Ser Arg Ser Gly Thr
 215 220 225

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Ser Thr Val Arg | Ile Val Val Leu Asp | Val Asn Asp Asn Ala Pro | 230 | 235 | 240 |
| Gln Phe Ala Gln | Ala Leu Tyr Glu Thr | Gln Ala Pro Glu Asn Ser | 245 | 250 | 255 |
| Pro Ile Gly Phe | Leu Ile Val Lys Val | Trp Ala Glu Asp Val Asp | 260 | 265 | 270 |
| Ser Gly Val Asn | Ala Glu Val Ser Tyr | Ser Phe Phe Asp Ala Ser | 275 | 280 | 285 |
| Glu Asn Ile Arg | Thr Thr Phe Gln Ile | Asn Pro Phe Ser Gly Glu | 290 | 295 | 300 |
| Ile Phe Leu Arg | Glu Leu Leu Asp Tyr | Glu Leu Val Asn Ser Tyr | 305 | 310 | 315 |
| Lys Ile Asn Ile | Gln Ala Met Asp Gly | Gly Gly Leu Ser Ala Arg | 320 | 325 | 330 |
| Cys Arg Val Leu | Val Glu Val Leu Asp | Thr Asn Asp Asn Pro Pro | 335 | 340 | 345 |
| Glu Leu Ile Val | Ser Ser Phe Ser Asn | Ser Val Ala Glu Asn Ser | 350 | 355 | 360 |
| Pro Glu Thr Pro | Leu Ala Val Phe Lys | Ile Asn Asp Arg Asp Ser | 365 | 370 | 375 |
| Gly Glu Asn Gly | Lys Met Val Cys Tyr | Ile Gln Glu Asn Leu Pro | 380 | 385 | 390 |
| Phe Leu Leu Lys | Pro Ser Val Glu Asn | Phe Tyr Ile Leu Ile Thr | 395 | 400 | 405 |
| Glu Gly Ala Leu | Asp Arg Glu Ile Arg | Ala Glu Tyr Asn Ile Thr | 410 | 415 | 420 |
| Ile Thr Val Thr | Asp Leu Gly Thr Pro | Arg Leu Lys Thr Glu His | 425 | 430 | 435 |
| Asn Ile Thr Val | Leu Val Ser Asp Val | Asn Asp Asn Ala Pro Ala | 440 | 445 | 450 |
| Phe Thr Gln Thr | Ser Tyr Thr Leu Phe | Val Arg Glu Asn Asn Ser | 455 | 460 | 465 |
| Pro Ala Leu His | Ile Gly Ser Val Ser | Ala Thr Asp Arg Asp Ser | 470 | 475 | 480 |
| Gly Thr Asn Ala | Gln Val Thr Tyr Ser | Leu Leu Pro Pro Gln Asp | 485 | 490 | 495 |
| Pro His Leu Pro | Leu Ala Ser Leu Val | Ser Ile Asn Ala Asp Asn | 500 | 505 | 510 |
| Gly His Leu Phe | Ala Leu Arg Ser Leu | Asp Tyr Glu Ala Leu Gln | | | |

| 515 | | | | | 520 | | | | | 525 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Phe | Glu | Phe | Arg | Val | Gly | Ala | Thr | Asp | Arg | Gly | Ser | Pro | Ala |
| | | | | 530 | | | | | 535 | | | | | 540 |
| Leu | Ser | Arg | Glu | Ala | Leu | Val | Arg | Val | Leu | Val | Leu | Asp | Ala | Asn |
| | | | | 545 | | | | | 550 | | | | | 555 |
| Asp | Asn | Ser | Pro | Phe | Val | Leu | Tyr | Pro | Leu | Gln | Asn | Gly | Ser | Ala |
| | | | | 560 | | | | | 565 | | | | | 570 |
| Pro | Cys | Thr | Glu | Leu | Val | Pro | Arg | Ala | Ala | Glu | Pro | Gly | Tyr | Leu |
| | | | | 575 | | | | | 580 | | | | | 585 |
| Val | Thr | Lys | Val | Val | Ala | Val | Asp | Gly | Asp | Ser | Gly | Gln | Asn | Ala |
| | | | | 590 | | | | | 595 | | | | | 600 |
| Trp | Leu | Ser | Tyr | Gln | Leu | Leu | Lys | Ala | Thr | Glu | Pro | Gly | Leu | Phe |
| | | | | 605 | | | | | 610 | | | | | 615 |
| Gly | Val | Trp | Ala | His | Asn | Gly | Glu | Val | Arg | Thr | Ala | Arg | Leu | Leu |
| | | | | 620 | | | | | 625 | | | | | 630 |
| Ser | Glu | Arg | Asp | Ala | Ala | Lys | His | Arg | Leu | Val | Val | Leu | Val | Lys |
| | | | | 635 | | | | | 640 | | | | | 645 |
| Asp | Asn | Gly | Glu | Pro | Pro | Arg | Ser | Ala | Thr | Ala | Thr | Leu | His | Leu |
| | | | | 650 | | | | | 655 | | | | | 660 |
| Leu | Leu | Val | Asp | Gly | Phe | Ser | Gln | Pro | Tyr | Leu | Pro | Leu | Pro | Glu |
| | | | | 665 | | | | | 670 | | | | | 675 |
| Ala | Ala | Pro | Ala | Gln | Ala | Gln | Ala | Glu | Ala | Asp | Leu | Leu | Thr | Val |
| | | | | 680 | | | | | 685 | | | | | 690 |
| Tyr | Leu | Val | Val | Ala | Leu | Ala | Ser | Val | Ser | Ser | Leu | Phe | Leu | Leu |
| | | | | 695 | | | | | 700 | | | | | 705 |
| Ser | Val | Leu | Leu | Phe | Val | Ala | Val | Arg | Leu | Cys | Arg | Arg | Ser | Arg |
| | | | | 710 | | | | | 715 | | | | | 720 |
| Ala | Ala | Ser | Val | Gly | Arg | Cys | Ser | Val | Pro | Glu | Gly | Pro | Phe | Pro |
| | | | | 725 | | | | | 730 | | | | | 735 |
| Gly | His | Leu | Val | Asp | Val | Arg | Gly | Ala | Glu | Thr | Leu | Ser | Gln | Ser |
| | | | | 740 | | | | | 745 | | | | | 750 |
| Tyr | Gln | Tyr | Glu | Val | Cys | Leu | Thr | Gly | Gly | Pro | Gly | Thr | Ser | Glu |
| | | | | 755 | | | | | 760 | | | | | 765 |
| Phe | Lys | Phe | Leu | Lys | Pro | Val | Ile | Ser | Asp | Ile | Gln | Ala | Gln | Gly |
| | | | | 770 | | | | | 775 | | | | | 780 |
| Pro | Gly | Arg | Lys | Gly | Glu | Glu | Asn | Ser | Thr | Phe | Arg | Asn | Ser | Phe |
| | | | | 785 | | | | | 790 | | | | | 795 |
| Gly | Phe | Asn | Ile | Gln | | | | | | | | | | |
| | | | | 800 | | | | | | | | | | |

<210> 53
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 53
ctggggagtg tccttggcag gttc 24

<210> 54
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 54
cagcatacag ggctctttag ggcacac 27

<210> 55
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 55
cgggtgactga ggaaacagag aaaggatcct ttgtggtcaa tctggc 46

<210> 56
<211> 2242
<212> DNA
<213> Homo Sapien

<220>
<221> unsure
<222> 2181
<223> unknown base

<400> 56
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tataccagcc tcgtcttcct tccgggggac aacgtgggtc agggcacaga 100
gagatattta atgtcaccct cttgggggctt tcatgggact ccctctgcca 150
catttttttg aggttgggaa agttgctaga ggcttcagaa ctccagccta 200
atggatocca aactcgggag aatggctgcg tccctgctgg ctgtgctgct 250
gctgctgctg gagcgcgga tggttctctc accctccccg cccccggcgc 300
tgttagagaa agtcttccag tacattgacc tccatcagga tgaatttgctg 350

cagacgctga aggagtgggt ggccatcgag agcgactctg tccagcctgt 400
 gcctcgcttc agacaagagc tcttcagaat gatggccgtg gctgcggaca 450
 cgctgcagcg cctggggggc cgtgtggcct cggtggacat gggtcctcag 500
 cagctgcccg atggtcagag tcttccaata cctcccgtca tcctggccga 550
 actggggagc gatcccacga aaggcaccgt gtgcttctac ggccacttgg 600
 acgtgcagcc tgctgaccgg ggcgatgggt ggctcacgga cccctatgtg 650
 ctgacggagg tagacgggaa actttatgga cgaggagcga ccgacaacaa 700
 aggccctgtc ttggcttggg tcaatgctgt gagcgccttc agagccctgg 750
 agcaagatct tcctgtgaat atcaaattca tcattgaggg gatggaagag 800
 gctggctctg ttgccctgga ggaacttgtg gaaaaagaaa aggaccgatt 850
 cttctctggg gtggactaca ttgtaatttc agataacctg tggatcagcc 900
 aaaggaagcc agcaatcact tatggaaccg gggggaacag ctacttcatg 950
 gtggaggtga aatgcagaga ccaggatttt cactcaggaa cctttggtgg 1000
 catccttcat gaaccaatgg ctgatctggg tgctcttctc ggtagcctgg 1050
 tagactcgtc tggatcatatc ctggtccttg gaatctatga tgaagtgggt 1100
 cctcttacag aagaggaaat aaatacatatc aaagccatcc atctagacct 1150
 agaagaatac cggaatagca gccgggttga gaaatttctg ttcgatacta 1200
 aggaggagat tctaattgcac ctctggaggt acccatctct ttctattcat 1250
 gggatcgagg gcgcgtttga tgagcctgga actaaaacag tcataacctg 1300
 ccgagttata ggaaaatttt caatccgtct agtccctcac atgaatgtgt 1350
 ctgcggtgga aaaacaggtg acacgacatc ttgaagatgt gttctccaaa 1400
 agaaatagtt ccaacaagat ggttggttcc atgactctag gactacaccc 1450
 gtggattgca aatattgatg acaccagta tctcgcagca aaaagagcga 1500
 tcagaacagt gtttggaaca gaaccagata tgatccggga tggatccacc 1550
 attccaattg ccaaaatggt ccaggagatc gtccacaaga gcgtggtgct 1600
 aattccgctg ggagctgttg atgatggaga acattcgcag aatgagaaaa 1650
 tcaacaggtg gaactacata gagggaaacca aattatttgc tgcctttttc 1700
 ttagagatgg ccagctcca ttaatcacia gaaccttcta gtctgatctg 1750
 atccactgac agattcacct ccccccacatc cctagacagg gatggaatgt 1800

aaatatccag agaatttggg tctagtatag tacattttcc cttccattta 1850
 aaatgtcttg ggatatctgg atcagtaata aaatatttca aaggcacaga 1900
 tgttggaaat ggtttaaggt cccccactgc acaccttcct caagtcatag 1950
 ctgcttgcag caacttgatt tcccccaagtc ctgtgcaata gccccaggat 2000
 tggattcctt ccaacctttt agcatatctc caaccttgca atttgattgg 2050
 cataatcact ccggtttgct ttctaggtcc tcaagtgctc gtgacacata 2100
 atcattccat ccaatgatcg cctttgcttt accactcttt ccttttatct 2150
 tattaataaa aatgttggtc tccaccactg nctcccaaaa aaaaaaaaaa 2200
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aa 2242

<210> 57
 <211> 507
 <212> PRT
 <213> Homo Sapien

<400> 57
 Met Asp Pro Lys Leu Gly Arg Met Ala Ala Ser Leu Leu Ala Val
 1 5 10 15
 Leu Leu Leu Leu Leu Glu Arg Gly Met Phe Ser Ser Pro Ser Pro
 20 25 30
 Pro Pro Ala Leu Leu Glu Lys Val Phe Gln Tyr Ile Asp Leu His
 35 40 45
 Gln Asp Glu Phe Val Gln Thr Leu Lys Glu Trp Val Ala Ile Glu
 50 55 60
 Ser Asp Ser Val Gln Pro Val Pro Arg Phe Arg Gln Glu Leu Phe
 65 70 75
 Arg Met Met Ala Val Ala Ala Asp Thr Leu Gln Arg Leu Gly Ala
 80 85 90
 Arg Val Ala Ser Val Asp Met Gly Pro Gln Gln Leu Pro Asp Gly
 95 100 105
 Gln Ser Leu Pro Ile Pro Pro Val Ile Leu Ala Glu Leu Gly Ser
 110 115 120
 Asp Pro Thr Lys Gly Thr Val Cys Phe Tyr Gly His Leu Asp Val
 125 130 135
 Gln Pro Ala Asp Arg Gly Asp Gly Trp Leu Thr Asp Pro Tyr Val
 140 145 150
 Leu Thr Glu Val Asp Gly Lys Leu Tyr Gly Arg Gly Ala Thr Asp
 155 160 165
 Asn Lys Gly Pro Val Leu Ala Trp Ile Asn Ala Val Ser Ala Phe

Val Leu Ile Pro Leu Gly Ala Val Asp Asp Gly Glu His Ser Gln
470 475 480

Asn Glu Lys Ile Asn Arg Trp Asn Tyr Ile Glu Gly Thr Lys Leu
485 490 495

Phe Ala Ala Phe Phe Leu Glu Met Ala Gln Leu His
500 505

<210> 58

<211> 1470

<212> DNA

<213> Homo Sapien

<400> 58

ctcggctgga tttaaggttg ccgctagccg cctgggaatt taagggaccc 50
acactacctt cccgaagttg aaggcaagcg gtgattgttt gtagacggcg 100
ctttgtcatg ggacctgtgc ggttgggaat attgcttttc ctttttttgg 150
ccgtgcacga ggcttgggct gggatgttga aggaggagga cgatgacaca 200
gaacgcttgc ccagcaaagtg cgaagtgtgt aagctgctga gcacagagct 250
acaggcggaa ctgagtcgca ccggtcgatc tcgagaggtg ctggagctgg 300
ggcaggtgct ggatacaggc aagaggaaga gacacgtgcc ttacagcgtt 350
tcagagacaa ggctggaaga ggccttagag aatttatgtg agcggatcct 400
ggactatagt gttcacgctg agcgcaaggg ctactgaga tatgccaagg 450
gtcagagtca gaccatggca aactgaaag gcctagtga gaaggggggtg 500
aaggtggatc tggggatccc tctggagctt tgggatgagc ccagcgtgga 550
ggtcacatac ctcaagaagc agtgtgagac catgttggag gagtttgaag 600
acattgtggg agactggtac ttccaccatc aggagcagcc cctacaaaat 650
tttctctgtg aaggtcatgt gctcccagct gctgaaactg catgtctaca 700
ggaaacttgg actggaaagg agatcacaga tggggaagag aaacagaag 750
gggaggaaga gcaggaggag gaggaggaag aggaggaaga ggaaggggga 800
gacaagatga ccaagacagg aagccacccc aaacttgacc gagaagatct 850
ttgacccttg cctttgagcc ccaggagggg gaagggatca tggagagccc 900
tctaaagcct gcactctccc tgctccacag ctttcagggt gtgtttatga 950
gtgactccac ccaagcttgt agctgttctc tccatctaa cctcaggcaa 1000
gatcctgggtg aaacagcatg acatggcttc tggggtggag ggtgggggtg 1050
gaggtcctgc tcctagagat gaactctatc cagcccctta attggcaggt 1100

gtatgtgctg acagtactga aagctttcct ctttaactga tcccaccccc 1150
 acccaaaagt cagcagtggc actggagctg tgggctttgg ggaagtcact 1200
 tagctcctta aggtctgttt ttagaccctt ccaaggaaga ggccagaacg 1250
 gacattctct gcgatctata tacattgcct gtatccagga ggctacacac 1300
 cagcaaaccg tgaaggagaa tgggacactg ggtcatggcc tggagttgct 1350
 gataatttag gtgggataga tacttggtct acttaagctc aatgtaaccc 1400
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 aacttttttc tttttttcta 1470

<210> 59
 <211> 248
 <212> PRT
 <213> Homo Sapien

<400> 59
 Met Gly Pro Val Arg Leu Gly Ile Leu Leu Phe Leu Phe Leu Ala
 1 5 10 15
 Val His Glu Ala Trp Ala Gly Met Leu Lys Glu Glu Asp Asp Asp
 20 25 30
 Thr Glu Arg Leu Pro Ser Lys Cys Glu Val Cys Lys Leu Leu Ser
 35 40 45
 Thr Glu Leu Gln Ala Glu Leu Ser Arg Thr Gly Arg Ser Arg Glu
 50 55 60
 Val Leu Glu Leu Gly Gln Val Leu Asp Thr Gly Lys Arg Lys Arg
 65 70 75
 His Val Pro Tyr Ser Val Ser Glu Thr Arg Leu Glu Glu Ala Leu
 80 85 90
 Glu Asn Leu Cys Glu Arg Ile Leu Asp Tyr Ser Val His Ala Glu
 95 100 105
 Arg Lys Gly Ser Leu Arg Tyr Ala Lys Gly Gln Ser Gln Thr Met
 110 115 120
 Ala Thr Leu Lys Gly Leu Val Gln Lys Gly Val Lys Val Asp Leu
 125 130 135
 Gly Ile Pro Leu Glu Leu Trp Asp Glu Pro Ser Val Glu Val Thr
 140 145 150
 Tyr Leu Lys Lys Gln Cys Glu Thr Met Leu Glu Glu Phe Glu Asp
 155 160 165
 Ile Val Gly Asp Trp Tyr Phe His His Gln Glu Gln Pro Leu Gln
 170 175 180

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Phe | Leu | Cys | Glu | Gly | His | Val | Leu | Pro | Ala | Ala | Glu | Thr | Ala |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Cys | Leu | Gln | Glu | Thr | Trp | Thr | Gly | Lys | Glu | Ile | Thr | Asp | Gly | Glu |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Glu | Lys | Thr | Glu | Gly | Glu | Glu | Glu | Gln | Glu | Glu | Glu | Glu | Glu | Glu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Glu | Glu | Glu | Glu | Gly | Gly | Asp | Lys | Met | Thr | Lys | Thr | Gly | Ser | His |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Pro | Lys | Leu | Asp | Arg | Glu | Asp | Leu | | | | | | | |
| | | | | 245 | | | | | | | | | | |

<210> 60
 <211> 890
 <212> DNA
 <213> Homo Sapien

<400> 60
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 ctgcctgtcc ttctccctgt gcttaaccag aggtgcccat gggttggaca 100
 atgaggettg tcacagcagc actgttactg ggtctcatga tgggtggtcac 150
 tggagacgag gatgagaaca gcccggtgtgc ccatgaggcc ctcttggacg 200
 aggacaccct cttttgccag ggccttgaag ttttctaccc agagttgggg 250
 aacattggct gcaagggttg tcctgattgt aacaactaca gacagaagat 300
 cacctcctgg atggagccga tagtcaagtt cccggggggc gtggacggcg 350
 caacctatat cctggtgatg gtggatccag atgccctag cagagcagaa 400
 cccagacaga gattctggag acattggctg gtaacagata tcaagggcgc 450
 cgacctgaag aaaggaaga ttcagggcca ggagttatca gcctaccagg 500
 ctccctcccc accggcacac agtggcttcc atcgctacca gttctttgtc 550
 tatcttcagg aaggaaaagt catctctctc cttcccaagg aaaacaaaac 600
 tcgaggetct tggaaaatgg acagatttct gaaccgcttc cacctgggcg 650
 aacctgaagc aagcaccag ttcattgacc agaactacca ggactcacca 700
 accctccagg ctcccagagg aagggccagc gagcccaagc acaaaaccag 750
 gcagagatag ctgcctgcta gatagccggc tttgccatcc gggcatgtgg 800
 ccacactgct caccaccgac gatgtgggta tggaaccccc tctggataca 850
 gaacccttc ttttccaaat taaaaaaaaa aatcatcaaa 890

<210> 61

<211> 223
 <212> PRT
 <213> Homo Sapien

<400> 61

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Gly | Trp | Thr | Met | Arg | Leu | Val | Thr | Ala | Ala | Leu | Leu | Leu | Gly | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Leu | Met | Met | Val | Val | Thr | Gly | Asp | Glu | Asp | Glu | Asn | Ser | Pro | Cys | |
| | | | 20 | | | | | | 25 | | | | | 30 | |
| Ala | His | Glu | Ala | Leu | Leu | Asp | Glu | Asp | Thr | Leu | Phe | Cys | Gln | Gly | |
| | | | 35 | | | | | | 40 | | | | | 45 | |
| Leu | Glu | Val | Phe | Tyr | Pro | Glu | Leu | Gly | Asn | Ile | Gly | Cys | Lys | Val | |
| | | | 50 | | | | | | 55 | | | | | 60 | |
| Val | Pro | Asp | Cys | Asn | Asn | Tyr | Arg | Gln | Lys | Ile | Thr | Ser | Trp | Met | |
| | | | 65 | | | | | | 70 | | | | | 75 | |
| Glu | Pro | Ile | Val | Lys | Phe | Pro | Gly | Ala | Val | Asp | Gly | Ala | Thr | Tyr | |
| | | | 80 | | | | | | 85 | | | | | 90 | |
| Ile | Leu | Val | Met | Val | Asp | Pro | Asp | Ala | Pro | Ser | Arg | Ala | Glu | Pro | |
| | | | 95 | | | | | | 100 | | | | | 105 | |
| Arg | Gln | Arg | Phe | Trp | Arg | His | Trp | Leu | Val | Thr | Asp | Ile | Lys | Gly | |
| | | | 110 | | | | | | 115 | | | | | 120 | |
| Ala | Asp | Leu | Lys | Lys | Gly | Lys | Ile | Gln | Gly | Gln | Glu | Leu | Ser | Ala | |
| | | | 125 | | | | | | 130 | | | | | 135 | |
| Tyr | Gln | Ala | Pro | Ser | Pro | Pro | Ala | His | Ser | Gly | Phe | His | Arg | Tyr | |
| | | | 140 | | | | | | 145 | | | | | 150 | |
| Gln | Phe | Phe | Val | Tyr | Leu | Gln | Glu | Gly | Lys | Val | Ile | Ser | Leu | Leu | |
| | | | 155 | | | | | | 160 | | | | | 165 | |
| Pro | Lys | Glu | Asn | Lys | Thr | Arg | Gly | Ser | Trp | Lys | Met | Asp | Arg | Phe | |
| | | | 170 | | | | | | 175 | | | | | 180 | |
| Leu | Asn | Arg | Phe | His | Leu | Gly | Glu | Pro | Glu | Ala | Ser | Thr | Gln | Phe | |
| | | | 185 | | | | | | 190 | | | | | 195 | |
| Met | Thr | Gln | Asn | Tyr | Gln | Asp | Ser | Pro | Thr | Leu | Gln | Ala | Pro | Arg | |
| | | | 200 | | | | | | 205 | | | | | 210 | |
| Gly | Arg | Ala | Ser | Glu | Pro | Lys | His | Lys | Thr | Arg | Gln | Arg | | | |
| | | | 215 | | | | | | 220 | | | | | | |

<210> 62
 <211> 1321
 <212> DNA
 <213> Homo Sapien

<400> 62

gtcgacccac gcgtccgaag ctgctggagc cacgattcag tcccctggac 50

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Gly | Thr | Pro | Gly | Asp | Ala | Asp | Gly | Gly | Gly | Arg | Ala | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Tyr | Gln | Ser | Ile | Thr | Val | Ala | Val | Ile | Thr | Cys | Lys | Tyr | Pro | Glu |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Ala | Leu | Glu | Gln | Gly | Arg | Gly | Asp | Pro | Ile | Tyr | Leu | Gly | Ile | Gln |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Asn | Pro | Glu | Met | Cys | Leu | Tyr | Cys | Glu | Lys | Val | Gly | Glu | Gln | Pro |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Thr | Leu | Gln | Leu | Lys | Glu | Gln | Lys | Ile | Met | Asp | Leu | Tyr | Gly | Gln |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Pro | Glu | Pro | Val | Lys | Pro | Phe | Leu | Phe | Tyr | Arg | Ala | Lys | Thr | Gly |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Arg | Thr | Ser | Thr | Leu | Glu | Ser | Val | Ala | Phe | Pro | Asp | Trp | Phe | Ile |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Ala | Ser | Ser | Lys | Arg | Asp | Gln | Pro | Ile | Ile | Leu | Thr | Ser | Glu | Leu |
| | | | 110 | | | | | | 115 | | | | | 120 |
| Gly | Lys | Ser | Tyr | Asn | Thr | Ala | Phe | Glu | Leu | Asn | Ile | Asn | Asp | |
| | | | 125 | | | | | | 130 | | | | | |

<210> 64
 <211> 999
 <212> DNA
 <213> Homo Sapien

<400> 64
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 gtgctgctgc tgctcctggc gggagccccc gccgcgcggc ccaactcccc 100
 gacctgctac tcccgcctgc gggccctgag ccaggagatc accgcgcact 150
 tcaacctcct gcaggtctcg gagccctcgg agccatgtgt gagatacctg 200
 cccaggctgt acctggacat acacaattac tgtgtgctgg acaagctgcg 250
 ggactttgtg gcctcgcccc cgtgtttgaa agtggcccag gtagattcct 300
 tgaaggacaa agcacggaag ctgtacacca tcatgaactc gttctgcagg 350
 agagatttgg tattcctggt ggatgactgc aatgccttgg aatacccaat 400
 cccagtgact acggtcctgc cagatcgtca gcgctaaggg aactgagacc 450
 agagaaagaa cccaagagaa ctaaagttat gtcagctacc cagacttaat 500
 gggccagagc catgaccctc acaggtcttg tgtagttgt atctgaaact 550
 gttatgtatc tctctacctt ctggaaaaca gggctggtat tcctaccag 600
 gaacctcctt tgagcataga gtttagcaacc atgcttctca ttcccttgac 650

tcatgtcttg ccaggatggg tagatacaca gcatgttgat ttggtcacta 700
 aaaagaagaa aaggactaac aagcttcact tttatgaaca actattttga 750
 gaacatgcac aatagtatgt ttttattact gggttaatgg agtaatggta 800
 cttttattct ttcttgatag aaacctgctt acatttaacc aagcttctat 850
 tatgcctttt tctaacacag actttcttca ctgtctttca tttaaaaaga 900
 aattaatgct cttaagatat atattttacg tagtgctgac aggaccact 950
 ctttcattga aaggatgatga aaatcaaata aagaatctct tcacatgga 999

<210> 65
 <211> 136
 <212> PRT
 <213> Homo Sapien

<400> 65
 Met Arg Thr Pro Gly Pro Leu Pro Val Leu Leu Leu Leu Leu Ala
 1 5 10 15
 Gly Ala Pro Ala Ala Arg Pro Thr Pro Pro Thr Cys Tyr Ser Arg
 20 25 30
 Met Arg Ala Leu Ser Gln Glu Ile Thr Arg Asp Phe Asn Leu Leu
 35 40 45
 Gln Val Ser Glu Pro Ser Glu Pro Cys Val Arg Tyr Leu Pro Arg
 50 55 60
 Leu Tyr Leu Asp Ile His Asn Tyr Cys Val Leu Asp Lys Leu Arg
 65 70 75
 Asp Phe Val Ala Ser Pro Pro Cys Trp Lys Val Ala Gln Val Asp
 80 85 90
 Ser Leu Lys Asp Lys Ala Arg Lys Leu Tyr Thr Ile Met Asn Ser
 95 100 105
 Phe Cys Arg Arg Asp Leu Val Phe Leu Leu Asp Asp Cys Asn Ala
 110 115 120
 Leu Glu Tyr Pro Ile Pro Val Thr Thr Val Leu Pro Asp Arg Gln
 125 130 135
 Arg

<210> 66
 <211> 1893
 <212> DNA
 <213> Homo Sapien

<400> 66
 gtctccgcgt cacaggaact tcagcaccca caggcgac agcgctcccc 50

agaaaaaata ttgaatgggt gaagaaacat gacaaaaagg gaaataaaga 1550
 agattatgac ctttcaaaga tgagagactt catcaataaa caagctgatg 1600
 cttatgtgga gaaaggcatc cttgacaagg aagaagccga ggccatcaag 1650
 cgcatttata gcagcctgta aaaatggcaa aagatccagg agtctttcaa 1700
 ctgtttcaga aaacataata tagcttaaaa cacttctaata tctgtgatta 1750
 aaatTTTTTtg acccaagggt tattagaaag tgctgaattt acagtagtta 1800
 accttttaca agtgggttaaa acatagcttt cttcccgtaa aaactatctg 1850
 aaagtaaagt tgtatgtaag ctgaaaaaaaa aaaaaaaaaa aaa 1893

<210> 67
 <211> 468
 <212> PRT
 <213> Homo Sapien

<400> 67
 Met Gly Phe Leu Gly Thr Gly Thr Trp Ile Leu Val Leu Val Leu
 1 5 10 15
 Pro Ile Gln Ala Phe Pro Lys Pro Gly Gly Ser Gln Asp Lys Ser
 20 25 30
 Leu His Asn Arg Glu Leu Ser Ala Glu Arg Pro Leu Asn Glu Gln
 35 40 45
 Ile Ala Glu Ala Glu Glu Asp Lys Ile Lys Lys Thr Tyr Pro Pro
 50 55 60
 Glu Asn Lys Pro Gly Gln Ser Asn Tyr Ser Phe Val Asp Asn Leu
 65 70 75
 Asn Leu Leu Lys Ala Ile Thr Glu Lys Glu Lys Ile Glu Lys Glu
 80 85 90
 Arg Gln Ser Ile Arg Ser Ser Pro Leu Asp Asn Lys Leu Asn Val
 95 100 105
 Glu Asp Val Asp Ser Thr Lys Asn Arg Lys Leu Ile Asp Asp Tyr
 110 115 120
 Asp Ser Thr Lys Ser Gly Leu Asp His Lys Phe Gln Asp Asp Pro
 125 130 135
 Asp Gly Leu His Gln Leu Asp Gly Thr Pro Leu Thr Ala Glu Asp
 140 145 150
 Ile Val His Lys Ile Ala Ala Arg Ile Tyr Glu Glu Asn Asp Arg
 155 160 165
 Ala Val Phe Asp Lys Ile Val Ser Lys Leu Leu Asn Leu Gly Leu
 170 175 180

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Ile Thr Glu Ser | Gln Ala His Thr Leu | Glu Asp Glu Val Ala Glu | 185 | 190 | 195 |
| Val Leu Gln Lys | Leu Ile Ser Lys Glu | Ala Asn Asn Tyr Glu Glu | 200 | 205 | 210 |
| Asp Pro Asn Lys | Pro Thr Ser Trp Thr | Glu Asn Gln Ala Gly Lys | 215 | 220 | 225 |
| Ile Pro Glu Lys | Val Thr Pro Met Ala | Ala Ile Gln Asp Gly Leu | 230 | 235 | 240 |
| Ala Lys Gly Glu | Asn Asp Glu Thr Val | Ser Asn Thr Leu Thr Leu | 245 | 250 | 255 |
| Thr Asn Gly Leu | Glu Arg Arg Thr Lys | Thr Tyr Ser Glu Asp Asn | 260 | 265 | 270 |
| Phe Glu Glu Leu | Gln Tyr Phe Pro Asn | Phe Tyr Ala Leu Leu Lys | 275 | 280 | 285 |
| Ser Ile Asp Ser | Glu Lys Glu Ala Lys | Glu Lys Glu Thr Leu Ile | 290 | 295 | 300 |
| Thr Ile Met Lys | Thr Leu Ile Asp Phe | Val Lys Met Met Val Lys | 305 | 310 | 315 |
| Tyr Gly Thr Ile | Ser Pro Glu Glu Gly | Val Ser Tyr Leu Glu Asn | 320 | 325 | 330 |
| Leu Asp Glu Met | Ile Ala Leu Gln Thr | Lys Asn Lys Leu Glu Lys | 335 | 340 | 345 |
| Asn Ala Thr Asp | Asn Ile Ser Lys Leu | Phe Pro Ala Pro Ser Glu | 350 | 355 | 360 |
| Lys Ser His Glu | Glu Thr Asp Ser Thr | Lys Glu Glu Ala Ala Lys | 365 | 370 | 375 |
| Met Glu Lys Glu | Tyr Gly Ser Leu Lys | Asp Ser Thr Lys Asp Asp | 380 | 385 | 390 |
| Asn Ser Asn Pro | Gly Gly Lys Thr Asp | Glu Pro Lys Gly Lys Thr | 395 | 400 | 405 |
| Glu Ala Tyr Leu | Glu Ala Ile Arg Lys | Asn Ile Glu Trp Leu Lys | 410 | 415 | 420 |
| Lys His Asp Lys | Lys Gly Asn Lys Glu | Asp Tyr Asp Leu Ser Lys | 425 | 430 | 435 |
| Met Arg Asp Phe | Ile Asn Lys Gln Ala | Asp Ala Tyr Val Glu Lys | 440 | 445 | 450 |
| Gly Ile Leu Asp | Lys Glu Glu Ala Glu | Ala Ile Lys Arg Ile Tyr | 455 | 460 | 465 |
| Ser Ser Leu | | | | | |

<210> 68
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 68
cgtcacagga acttcagcac cc 22

<210> 69
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 69
gtcttggtt cctccaggtt tgg 23

<210> 70
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 70
ggacagcgt cccctctacc tggagacttg actcccgc 38

<210> 71
<211> 2379
<212> DNA
<213> Homo Sapien

<400> 71
gttgctccgg cggcgctcgg ggagggagcc agcagcctag ggcctaggcc 50
cgggccacca tggcgctgcc tccaggccca gccgccctcc ggcacacact 100
gctgctcctg ccagcccttc tgagctcagg ttggggggag ttggagccac 150
aaatagatgg tcagacctgg gctgagcggg cacttcggga gaatgaacgc 200
cacgccttca cctgccgggt ggcagggggg cctggcaccc ccagattggc 250
ctggtatctg gatggacagc tgcaggaggc cagcacctca agactgctga 300
gcgtgggagg ggaggccttc tctggaggca ccagcacctt cactgtcact 350
gcccatcggg ccagcatga gctcaactgc tctctgcagg accccagaag 400
tggccgatca gccaacgcct ctgtcatcct taatgtgcaa ttcaagccag 450

tctgggattc actgtgagtg tcctgagctc tcgggggttga tggtttttct 1950
ctcagcatgt ctcctccacc acgggacccc agccctgacc aacccatggt 2000
tgcctcatca gcaggaaggt gcccttcctg gaggatggtc gccacaggca 2050
cataattcaa cagtgtggaa gcttttagggg aacatggaga aagaaggaga 2100
ccacataccc caaagtgacc taagaacact ttaaaaagca acatgtaaat 2150
gattggaaat taatatagta cagaatatat ttttcccttg ttgagatctt 2200
cttttgtaat gtttttcatg ttactgccta gggcgggtgct gagcacacag 2250
caagtttaat aaacttgact gaattcattt aaaaaaaaaa aaaaaaaaaa 2300
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2350
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2379

<210> 72
<211> 322
<212> PRT
<213> Homo Sapien

<400> 72
Met Ala Leu Pro Pro Gly Pro Ala Ala Leu Arg His Thr Leu Leu
1 5 10 15
Leu Leu Pro Ala Leu Leu Ser Ser Gly Trp Gly Glu Leu Glu Pro
20 25 30
Gln Ile Asp Gly Gln Thr Trp Ala Glu Arg Ala Leu Arg Glu Asn
35 40 45
Glu Arg His Ala Phe Thr Cys Arg Val Ala Gly Gly Pro Gly Thr
50 55 60
Pro Arg Leu Ala Trp Tyr Leu Asp Gly Gln Leu Gln Glu Ala Ser
65 70 75
Thr Ser Arg Leu Leu Ser Val Gly Gly Glu Ala Phe Ser Gly Gly
80 85 90
Thr Ser Thr Phe Thr Val Thr Ala His Arg Ala Gln His Glu Leu
95 100 105
Asn Cys Ser Leu Gln Asp Pro Arg Ser Gly Arg Ser Ala Asn Ala
110 115 120
Ser Val Ile Leu Asn Val Gln Phe Lys Pro Glu Ile Ala Gln Val
125 130 135
Gly Ala Lys Tyr Gln Glu Ala Gln Gly Pro Gly Leu Leu Val Val
140 145 150
Leu Phe Ala Leu Val Arg Ala Asn Pro Pro Ala Asn Val Thr Trp
155 160 165

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Asp | Gln | Asp | Gly | Pro | Val | Thr | Val | Asn | Thr | Ser | Asp | Phe | Leu |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Val | Leu | Asp | Ala | Gln | Asn | Tyr | Pro | Trp | Leu | Thr | Asn | His | Thr | Val |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Gln | Leu | Gln | Leu | Arg | Ser | Leu | Ala | His | Asn | Leu | Ser | Val | Val | Ala |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Thr | Asn | Asp | Val | Gly | Val | Thr | Ser | Ala | Ser | Leu | Pro | Ala | Pro | Gly |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Pro | Ser | Arg | His | Pro | Ser | Leu | Ile | Ser | Ser | Asp | Ser | Asn | Asn | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Lys | Leu | Asn | Asn | Val | Arg | Leu | Pro | Arg | Glu | Asn | Met | Ser | Leu | Pro |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Ser | Asn | Leu | Gln | Leu | Asn | Asp | Leu | Thr | Pro | Asp | Ser | Arg | Ala | Val |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Lys | Pro | Ala | Asp | Arg | Gln | Met | Ala | Gln | Asn | Asn | Ser | Arg | Pro | Glu |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Leu | Leu | Asp | Pro | Glu | Pro | Gly | Gly | Leu | Leu | Thr | Ser | Gln | Gly | Phe |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Ile | Arg | Leu | Pro | Val | Leu | Gly | Tyr | Ile | Tyr | Arg | Val | Ser | Ser | Val |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Ser | Ser | Asp | Glu | Ile | Trp | Leu | | | | | | | | |
| | | | | 320 | | | | | | | | | | |

<210> 73
 <211> 843
 <212> DNA
 <213> Homo Sapien

<400> 73
 cggggacgga agcggcccct gggcccgagg ggctggagcc gggccggggc 50
 gatgtggagc gcgggccgcg gcggggctgc ctggccggtg ctgttggggc 100
 tgctgctggc gctgttagtg ccgggcggtg gtgccgcaa gaccggtgcg 150
 gagctcgtga cctgcggggtc ggtgctgaag ctgctcaata cgcaccaccg 200
 cgtgcggctg cactcgcacg acatcaaata cggatccggc agcggccagc 250
 aatcgggtgac cggcgtagag gcgtcggacg acgccaatag ctactggcgg 300
 atccgcggcg gctcggaggg cgggtgcccg cgcgggtccc cggtgcgctg 350
 cgggcaggcg gtgaggctca cgcattgtgt tacgggcaag aacctgcaca 400
 cgcaccactt cccgtcgccg ctgtccaaca accaggaggt gaggccttt 450
 ggggaagacg gcgagggcga cgacctggac ctatggacag tgcgctgctc 500

tggacagcac tgggagcgtg aggctgctgt gcgcttccag catgtgggca 550
cctctgtgtt cctgtcagtc acgggtgagc agtatggaag ccccatccgt 600
gggcagcatg aggtccacgg catgcccagt gccaacacgc acaatacgtg 650
gaaggccatg gaaggcatct tcatcaagcc tagtgtggag ccctctgcag 700
gtcacgatga actctgagtg tgtggatgga tgggtggatg gaggggtggca 750
ggtggggcgt ctgcagggcc actcttggca gagactttgg gttttagagg 800
gtcctcaagt gcctttgtga ttaaagaatg ttggtctatg aaa 843

<210> 74
<211> 221
<212> PRT
<213> Homo Sapien

<400> 74
Met Trp Ser Ala Gly Arg Gly Gly Ala Ala Trp Pro Val Leu Leu
1 5 10 15
Gly Leu Leu Leu Ala Leu Leu Val Pro Gly Gly Gly Ala Ala Lys
20 25 30
Thr Gly Ala Glu Leu Val Thr Cys Gly Ser Val Leu Lys Leu Leu
35 40 45
Asn Thr His His Arg Val Arg Leu His Ser His Asp Ile Lys Tyr
50 55 60
Gly Ser Gly Ser Gly Gln Gln Ser Val Thr Gly Val Glu Ala Ser
65 70 75
Asp Asp Ala Asn Ser Tyr Trp Arg Ile Arg Gly Gly Ser Glu Gly
80 85 90
Gly Cys Pro Arg Gly Ser Pro Val Arg Cys Gly Gln Ala Val Arg
95 100 105
Leu Thr His Val Leu Thr Gly Lys Asn Leu His Thr His His Phe
110 115 120
Pro Ser Pro Leu Ser Asn Asn Gln Glu Val Ser Ala Phe Gly Glu
125 130 135
Asp Gly Glu Gly Asp Asp Leu Asp Leu Trp Thr Val Arg Cys Ser
140 145 150
Gly Gln His Trp Glu Arg Glu Ala Ala Val Arg Phe Gln His Val
155 160 165
Gly Thr Ser Val Phe Leu Ser Val Thr Gly Glu Gln Tyr Gly Ser
170 175 180
Pro Ile Arg Gly Gln His Glu Val His Gly Met Pro Ser Ala Asn
185 190 195

Thr His Asn Thr Trp Lys Ala Met Glu Gly Ile Phe Ile Lys Pro
 200 205 210

Ser Val Glu Pro Ser Ala Gly His Asp Glu Leu
 215 220

<210> 75
 <211> 1049
 <212> DNA
 <213> Homo Sapien

<400> 75
 gttgctatgt tgcccaggct ggtccttgaag tgccttgacc tcctaaagtg 50
 ttggaaccac agacgtgagc cactccaccc agcctaaaac ttcattcttct 100
 ttggatgaga tgaacacttt taacaagaga acaggactct atataaatcg 150
 ctgtgggctc accacctcta aggaggagca ctgactgaag acagaaaaat 200
 tgatgaactg aagaagacat ggtccattat gccttacaaa cttacacagt 250
 gctttgggaa ttccaaagta ctgagtggag agaggtgttt caggagccgt 300
 agagccagat cgtcatcatg tctgcattgt ggctgctgct gggcctcctt 350
 gccctgatgg acttgtctga aagcagcaac tggggatgct atggaaacat 400
 ccaaagcctg gacaccctg gagcatcttg tgggattgga agacgtcacg 450
 gcctgaacta ctgtggagtt cgtgcttctg aaaggctggc tgaaatagac 500
 atgccatacc tcctgaaata tcaacccatg atgcaaacca ttggccaaaa 550
 gtactgcatg gatcctgccc tgatcgtctg tgtcttgtcc aggaagtctc 600
 ccggtgacaa aattctggtc aacatgggcg ataggactag catggtgcag 650
 gaccctggct ctcaagctcc cacatcctgg attagtgagt ctgaggtttc 700
 ccagacaact gaagttctga ctactagaat caaagaaatc cagaggaggt 750
 ttccaacctg gaccctgac cagtacctga gaggtggact ctgtgcctac 800
 agtgggggtg ctggctatgt ccgaagcagc caggacctga gctgtgactt 850
 ctgcaatgat gtccttgac gagccaagta cctcaagaga catggcttct 900
 aacatctcag atgaaacca agaccatgat cacatatgca gcctcaaagt 950
 ttacacagat aaaactagcc aagggcacct gtaactggga atctgagttt 1000
 gacctaaaag tcattaaaat aacatgaatc ccattaaaaa aaaaaaaaaa 1049

<210> 76
 <211> 194
 <212> PRT
 <213> Homo Sapien

<400> 76

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Ala | Leu | Trp | Leu | Leu | Leu | Gly | Leu | Leu | Ala | Leu | Met | Asp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Ser | Glu | Ser | Ser | Asn | Trp | Gly | Cys | Tyr | Gly | Asn | Ile | Gln | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Asp | Thr | Pro | Gly | Ala | Ser | Cys | Gly | Ile | Gly | Arg | Arg | His | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Asn | Tyr | Cys | Gly | Val | Arg | Ala | Ser | Glu | Arg | Leu | Ala | Glu | Ile |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Asp | Met | Pro | Tyr | Leu | Leu | Lys | Tyr | Gln | Pro | Met | Met | Gln | Thr | Ile |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Gly | Gln | Lys | Tyr | Cys | Met | Asp | Pro | Ala | Val | Ile | Ala | Gly | Val | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Arg | Lys | Ser | Pro | Gly | Asp | Lys | Ile | Leu | Val | Asn | Met | Gly | Asp |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Arg | Thr | Ser | Met | Val | Gln | Asp | Pro | Gly | Ser | Gln | Ala | Pro | Thr | Ser |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Trp | Ile | Ser | Glu | Ser | Gln | Val | Ser | Gln | Thr | Thr | Glu | Val | Leu | Thr |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Thr | Arg | Ile | Lys | Glu | Ile | Gln | Arg | Arg | Phe | Pro | Thr | Trp | Thr | Pro |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Asp | Gln | Tyr | Leu | Arg | Gly | Gly | Leu | Cys | Ala | Tyr | Ser | Gly | Gly | Ala |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Gly | Tyr | Val | Arg | Ser | Ser | Gln | Asp | Leu | Ser | Cys | Asp | Phe | Cys | Asn |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Asp | Val | Leu | Ala | Arg | Ala | Lys | Tyr | Leu | Lys | Arg | His | Gly | Phe | |
| | | | | 185 | | | | | 190 | | | | | |

<210> 77

<211> 899

<212> DNA

<213> Homo Sapien

<400> 77

ttgaaaatct actctatcag ctgctgtggt tgccaccatt ctcaggaccc 50
tcgccatgaa agcccttatg ctgctcaccc tgtctgttct gctctgctgg 100
gtctcagctg acattcgctg tcaactcctgc tacaagggtcc ctgtgctggg 150
ctgtgtggac cggcagtcct gccgcctgga gccaggacag caatgcctga 200
caacacatgc ataccttggt aagatgtggg ttttctccaa tctgcgctgt 250
ggcacaccag aagagccctg tcaggaggcc ttcaaccaa ccaaccgcaa 300

gctgggtctg acatataaca ccacctgctg caacaaggac aactgcaaca 350
 gcgcaggacc ccggcccact ccagccctgg gccttgtctt ccttacctcc 400
 ttggctggcc ttggcctctg gctgctgcac tgagactcat tccattggct 450
 gccctcctc ccacctgcct tggcctgagc ctctctccct gtgtctctgt 500
 atcccctggc ttacagaat cgtctctccc tagctcccat ttctttaatt 550
 aaacactggt ccgagtgggc tcctcatcca tccttcccac ctcacaccct 600
 tcactctcct ttttctgggt cccttcccac ttccttccag gacctccatt 650
 ggctcctaga agggctcccc actttgcttc ctatactctg ctgtccccta 700
 cttgaggagg gattgggatc tgggcctgaa atggggcttc tgtgttgtcc 750
 ccagtgaagg ctcccacaag gacctgatga cctcactgta cagagctgac 800
 tccccaaacc caggctccca tatgtacccc atccccata ctcacctctt 850
 tccattttga gtaataaatg tctgagtctg gaaaaaaaaa aaaaaaaaaa 899

<210> 78
 <211> 125
 <212> PRT
 <213> Homo Sapien

<400> 78
 Met Lys Ala Leu Met Leu Leu Thr Leu Ser Val Leu Leu Cys Trp
 1 5 10 15
 Val Ser Ala Asp Ile Arg Cys His Ser Cys Tyr Lys Val Pro Val
 20 25 30
 Leu Gly Cys Val Asp Arg Gln Ser Cys Arg Leu Glu Pro Gly Gln
 35 40 45
 Gln Cys Leu Thr Thr His Ala Tyr Leu Gly Lys Met Trp Val Phe
 50 55 60
 Ser Asn Leu Arg Cys Gly Thr Pro Glu Glu Pro Cys Gln Glu Ala
 65 70 75
 Phe Asn Gln Thr Asn Arg Lys Leu Gly Leu Thr Tyr Asn Thr Thr
 80 85 90
 Cys Cys Asn Lys Asp Asn Cys Asn Ser Ala Gly Pro Arg Pro Thr
 95 100 105
 Pro Ala Leu Gly Leu Val Phe Leu Thr Ser Leu Ala Gly Leu Gly
 110 115 120
 Leu Trp Leu Leu His
 125

<210> 79

<211> 1977
<212> DNA
<213> Homo Sapien

<400> 79

acggggccgca gcggcagtgga cgtaggggttg gcgcacggat ccgttgccggc 50
tgcagctctg cagtcggggcc gttecttcgc cgccgccagg ggtagcgggtg 100
tagctgcgca gcgtcgcgcg cgctaccgca cccagggttcg gcccgtaggc 150
gtctggcagc ccggcgccat ctteatcgag cgccatggcc gcagcctgcg 200
ggccgggagc ggccgggtac tgcttgctcc tcggcttgca tttgtttctg 250
ctgaccgcgg gccctgccct gggttggaac gaccctgaca gaatgttgct 300
gcgggatgta aaagctctta cctccacta tgaccgctat accacctccc 350
gcaggctgga tcccatccca cagttgaaat gtgttgaggg cacagctggg 400
tgtgattctt ataccccaaa agtcatacag tgtcagaaca aaggctggga 450
tgggtatgat gtacagtggg aatgtaagac ggacttagat attgcataca 500
aatttgga aaactgtggtg agctgtgaag gctatgagtc ctctgaagac 550
cagtatgtac taagagggtt ttgtggcttg gagtataatt tagattatac 600
agaacttggc ctgcagaaac tgaaggagtc tggaaagcag cacggctttg 650
cctctttctc tgattattat tataagtggg cctcggcgga ttcttgtaac 700
atgagtggat tgattaccat cgtgggtactc cttgggatcg cctttgtagt 750
ctataagctg ttcttgagtg acgggcagta ttctcctcca ccgtactctg 800
agtatcctcc attttccac cgttaccaga gattcaccaa ctcagcagga 850
cctcctcccc caggctttaa gtctgagttc acaggaccac agaatactgg 900
ccatgggtgca acttctgggt ttggcagtg cttttacagga caacaaggat 950
atgaaaattc aggaccaggg ttctggacag gcttgggaac tgggtggaata 1000
ctaggatatt tgtttggcag caatagagcg gcaacaccct tctcagactc 1050
gtgggtactac ccgtcctatc ctccctccta ccctggcacg tggaataggg 1100
cttactcacc ccttcatgga ggctcgggca gctattcggt atgttcaaac 1150
tcagacacga aaaccagaac tgcacagga tatggtggta ccaggagacg 1200
ataaagtaga aagttggagt caaacactgg atgcagaaat tttggatttt 1250
tcatcacttt ctctttagaa aaaaagtact acctgttaac aattgggaaa 1300
aggggatatt caaaagttct gtggtgttat gtccagtgt gctttttgta 1350

ttctattatt tgaggctaaa agttgatgtg tgacaaaata cttatgtggt 1400
 giatgtcagt gtaacatgca gatgtatatt gcagtttttg aaagtgatca 1450
 ttactgtgga atgctaaaaa tacattaatt tctaaaacct gtgatgccct 1500
 aagaagcatt aagaatgaag gtgttggtact aatagaaact aagtacagaa 1550
 aatttcagtt ttaggtgggt gtagctgatg agttattacc tcatagagac 1600
 tataatattc tatttggtat tatattatth gatgtttgct gttcttcaaa 1650
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 35 40 45
 Thr Leu His Tyr Asp Arg Tyr Thr Thr Ser Arg Arg Leu Asp Pro
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 Ile Pro Gln Leu Lys Cys Val Gly Gly Thr Ala Gly Cys Asp Ser
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 Tyr Thr Pro Lys Val Ile Gln Cys Gln Asn Lys Gly Trp Asp Gly
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 Tyr Asp Val Gln Trp Glu Cys Lys Thr Asp Leu Asp Ile Ala Tyr
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 Lys Phe Gly Lys Thr Val Val Ser Cys Glu Gly Tyr Glu Ser Ser
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 Glu Asp Gln Tyr Val Leu Arg Gly Ser Cys Gly Leu Glu Tyr Asn
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| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Asp | Tyr | Thr | Glu | Leu | Gly | Leu | Gln | Lys | Leu | Lys | Glu | Ser | Gly |
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| Lys | Gln | His | Gly | Phe | Ala | Ser | Phe | Ser | Asp | Tyr | Tyr | Tyr | Lys | Trp |
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| Phe | Ser | Asp | Ser | Trp | Tyr | Tyr | Pro | Ser | Tyr | Pro | Pro | Ser | Tyr | Pro |
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| | | | | 335 | | | | | | | | | | |